

Amendments to the Claims

The current listing of the claims replaces all previous amendments and listings of the claims.

1. (Original) A method for forcibly regenerating a catalytic regeneration type particulate filter in an exhaust pipe through which exhaust gas flows, by adding fuel to the exhaust gas upstream of the particulate filter, the added fuel being oxidized on a flow-through type oxidation catalyst before the particulate filter to produce exothermic heat with which captured and accumulated particulates in the particulate filter are burned off, thereby forcibly regenerating the particulate filter, the method comprising, in light-load engine operation areas upon forcible regeneration of the particulate filter, intentionally increasing an engine load by load adding means and increasing an amount of fuel injected so as to compensate reduced torque due to the increased engine load.

2. (Original) The method as claimed in claim 1 wherein a retarder is adopted as said load adding means, said retarder being activated, with an accelerator pedal retaining its on-state, in light-load engine operation areas upon forcible regeneration of the particulate filter.

3. (Original) The method as claimed in claim 2 wherein, upon activation of the retarder, with the accelerator pedal retaining its on-state, in light-load engine operation areas for forcible regeneration of the particulate filter, an entrance temperature of the flow-through type oxidization catalyst is detected and a load on the retarder is feedback-controlled so as to raise a temperature detected up to a target value required for catalytic activity.

4. (Original) The method as claimed in claim 2 wherein, upon activation of the retarder, with the accelerator pedal retaining its on-state, in light-load engine operation areas for forcible regeneration of the particulate filter, and when a clutch is off, an intake flow rate is decreased and the amount of fuel injected is increased so as to compensate reduction of the torque due to such decreased intake flow rate.

5. (Original) The method as claimed in claim 3 wherein, upon activation of the retarder, with the accelerator pedal retaining its on-state, in light-load engine operation areas for forcible regeneration of the particulate filter, and when a clutch is off, an intake flow rate is decreased and the amount of fuel injected is increased so as to compensate reduction of the torque due to such decreased intake flow rate.

6. (New) A method of regenerating a filter of an engine, comprising:
adding fuel to an exhaust gas produced by the engine when a predetermined operation state of the engine is determined;

increasing a load on the engine to decrease an amount of torque produced by the engine when the predetermined operation state is determined;

routing the exhaust gas with the fuel to an oxidation catalyst;
exothermically reacting the fuel in the exhaust gas with the oxidation catalyst to heat the exhaust gas; and

routing the heated exhaust gas to the filter to regenerate the filter.

7. (New) The method according to claim 6, further comprising:
determining whether the engine is in a light-load engine operation state as the predetermined operation state.

8. (New) The method according to claim 7, wherein increasing comprises increasing the load on the engine with a retarder.

9. (New) The method according to claim 8, further comprising:
activating the retarder based on an operation state of an engine accelerator.

10. (New) The method according to claim 9, wherein activating comprises activating when the operation state of the engine accelerator is on.

11. (New) The method according to claim 10, further comprising:

detecting a temperature of the exhaust upstream of the oxidation catalyst when the retarder is activated; and

raising a temperature of the exhaust gas to a predetermined temperature based on the detected temperature.

12. (New) The method according to claim 10, further comprising:
decreasing an intake flow rate of air into the engine when the retarder is activated based on an operation state of an engine clutch.
13. (New) The method according to claim 12, wherein decreasing comprises decreasing when the operation state of the engine clutch is off.
14. (New) The method according to claim 11, further comprising:
decreasing an intake flow rate of air into the engine when the retarder is activated based on an operation state of an engine clutch.
15. (New) The method according to claim 14, wherein decreasing comprises decreasing when the operation state of the engine clutch is off.
16. (New) The method according to claim 8, wherein the filter comprises a particulate filter having a porous honeycomb structure.
17. (New) The method according to claim 16, wherein the filter comprises a ceramic material.